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EXAMINER

TATE, CHRISTOPHER ROBIN

ART UNIT	PAPER NUMBER
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1654

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/074,700	Applicant(s) Mattingly et al.
	Examiner Christopher Tate	Art Unit 1654
<i>-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --</i>		
Period for Reply A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION. <ul style="list-style-type: none"> - Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication. - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely. - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication. - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). - Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b). 		
Status <p>1) <input checked="" type="checkbox"/> Responsive to communication(s) filed on <u>May 20, 2003</u></p> <p>2a) <input type="checkbox"/> This action is FINAL. 2b) <input checked="" type="checkbox"/> This action is non-final.</p> <p>3) <input type="checkbox"/> Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under <i>Ex parte Quayle</i>, 1935 C.D. 11; 453 O.G. 213.</p>		
Disposition of Claims <p>4) <input checked="" type="checkbox"/> Claim(s) <u>1-34</u> is/are pending in the application.</p> <p>4a) Of the above, claim(s) <u>1-22</u> is/are withdrawn from consideration.</p> <p>5) <input type="checkbox"/> Claim(s) _____ is/are allowed.</p> <p>6) <input checked="" type="checkbox"/> Claim(s) <u>23-34</u> is/are rejected.</p> <p>7) <input type="checkbox"/> Claim(s) _____ is/are objected to.</p> <p>8) <input type="checkbox"/> Claims _____ subject to restriction and/or election requirement.</p>		
Application Papers <p>9) <input type="checkbox"/> The specification is objected to by the Examiner.</p> <p>10) <input type="checkbox"/> The drawing(s) filed on _____ Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).</p> <p>11) <input type="checkbox"/> The proposed drawing correction filed on _____ If approved, corrected drawings are required in reply to this Office action. Approved <input type="checkbox"/> Disapproved <input type="checkbox"/> by the Examiner.</p> <p>12) <input type="checkbox"/> The oath or declaration is objected to by the Examiner.</p>		
Priority under 35 U.S.C. §§ 119 and 120 <p>13) <input type="checkbox"/> Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).</p> <p>a) <input type="checkbox"/> All b) <input type="checkbox"/> Some* c) <input type="checkbox"/> None of:</p> <p>1. <input type="checkbox"/> Certified copies of the priority documents have been received.</p> <p>2. <input type="checkbox"/> Certified copies of the priority documents have been received in Application No. _____.</p> <p>3. <input type="checkbox"/> Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).</p> <p>*See the attached detailed Office action for a list of the certified copies not received.</p>		
<p>14) <input checked="" type="checkbox"/> Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).</p> <p>a) <input type="checkbox"/> The translation of the foreign language provisional application has been received.</p> <p>15) <input checked="" type="checkbox"/> Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.</p>		
Attachment(s) <p>1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)</p> <p>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</p> <p>3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s). <u>9</u></p> <p>4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____</p> <p>5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</p> <p>6) <input type="checkbox"/> Other: _____</p>		

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DETAILED ACTION

Applicant's election with traverse of Group II, claims 23-34, in Paper No. 6 is acknowledged. The traversal is on the ground(s) that the same search is required for the inventions of Groups I and II. This is not found persuasive because the search for each of the inventions of Groups I and II is not co-extensive particularly with regard to the literature search. Further, a reference which would anticipate the invention of one group would not necessarily anticipate or even make obvious the other group. Finally, the consideration for patentability is different in each case. Thus, it would be an undue burden to examine the two inventions in one application.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 U.S.C. § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

With respect to the elected invention, claims 23-34 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a method of controlling fire ants using a composition comprising an effective amount of the demonstrated strain of *Rhodobacter capsulatus* in a viable (i.e., not dead) state, does not reasonably provide enablement for controlling any and all insect populations using a composition comprising any and all species and

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subspecies of *Rhodobacter* (dead or alive) as instantly claimed (nor for using an extract thereof or a composition which includes at least one endotoxin produced thereby). The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims.

With respect to the elected invention, Applicants have reasonably demonstrated that a composition comprising an effective amount of a particular strain of *Rhodobacter capsulatus* in a viable (i.e., not dead) state has insecticidal activity against fire ants. As noted in parent Application No. 09/951,833, the state of the art recognizes that particular gram-negative bacterial strains - i.e., a particular ATCC strain of *Serratia marcescens* (ATCC 17999, previously known as *Serratia piscatorum*) and a particular strain of *Enterobacter cloacae* (ATCC 15337, previously known as *Aerobacter aerogenes*) have insecticidal activity, as do genetically altered gram-negative bacteria, especially those containing one or more *Bacillus thuringiensis* (*Bt*) toxin genes (see, e.g., art rejections of record set forth in parent Application 09/951,833) - each of which is in a viable (not dead) state. However, the claims broadly encompass a method of controlling any and all insect populations using a composition comprising any and all species and subspecies strains of the gram-negative bacterial genus *Rhodobacter* in a live or dead state, or an extract thereof, which is clearly beyond the scope of the instant disclosure. Since the vast majority of prior art microbial insecticidal compositions, including those against ants such as fire ants, are comprised of viable fungi or viable gram-positive bacteria (e.g., *Bt*) or, alternatively, comprised of genetically altered viable gram-negative bacteria (e.g., one which contains *Bt* genes), those skilled

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in the art are unlikely to accept the data as being correlatable to the broadly claimed insecticidal method which encompasses the use of any and all species and subspecies strains of *Rhodobacter* instantly claimed (e.g., non-genetically altered strains, as well as those that are dead). Further, regarding instant claim 28, *Rhodobacter* bacteria are not recognized in the art as being capable of producing an endotoxin. Accordingly, without clear and convincing evidence to the contrary, the claimed composition comprising an endotoxin (or an extract; including an extract containing such an endotoxin) produced by the claimed *Rhodobacter* (as recited in instant claim 28) is not deemed enabled.

Accordingly, with respect to the elected invention, others skilled in the art would be unable to practice the invention as claimed without undue experimentation and with a reasonable expectation of success, other than using a composition for controlling fire ants comprising an effective amount of the particular demonstrated *Rhodobacter capsulatus* strain in a viable (i.e., not dead) state, as shown in instant Examples 6 and 7 (however, please note that new matter cannot be introduced into the instant specification in response to this Office action).

With respect to the elected invention, claims 23-34 are also rejected under U.S.C. 112, first paragraph, because the claimed invention is not deemed enabled without **complete evidence either that the claimed biological material (i.e., the particular demonstrated Rhodobacter capsulatus strain shown in instant Examples 6 and 7) is known and readily available to the public or complete evidence of the deposit of the biological material.**

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It is apparent that the demonstrated microorganism is required to practice the elected claimed invention. As a required element it/they must be known and readily available to the public or obtainable by a repeatable method set forth in the specification. If they are not so obtainable or available, the enablement requirements of 35 U.S.C. § 112, first paragraph, may be satisfied by a deposit of the microorganisms. See 37 C.F.R. § 1.802.

The specification does not provide a repeatable process for obtaining the demonstrated microorganism and it is not apparent if the microorganisms are readily available to the public. The specification must contain the date that the microorganism was deposited, the name of the microorganism and the address of where the microorganism were deposited.

If the deposit has been made under the terms of the Budapest Treaty, then an affidavit or declaration by Applicants or someone associated with the patent owner who is in a position to make such assurances, or a statement by an attorney or record over his/her signature, and registration number, stating that the specific strain(s) has/have been deposited under the Budapest Treaty and that all restrictions imposed by the depositor on the availability to the public of the deposited material will be irrevocably removed upon the granting of a patent, would satisfy the deposit requirements. See 37 C.F.R. § 1.808.

If the deposit has not been made under the Budapest Treaty, then in order to certify that the deposits meet the criteria set forth in 37 C.F.R. § 1.801-1.809, Applicant(s) may provide assurance of compliance by an affidavit or declaration, or by a statement by an Attorney of record over his/her signature and registration number, showing that:

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- (a) during the pendency of this application, access to the invention will be afforded to the Commissioner upon request;
- (b) all restrictions upon availability to the public will be irrevocably removed upon granting of the patent;
- c) the deposit(s) will be maintained in a public depository for a period of 30 years or 5 years after the last request or for the effective life of the patent, whichever is longer;
- (d) a viability statement in accordance with the provisions of 37 C.F.R. § 1.807; and
- (e) the deposit will be replaced should it become necessary due to inviability, contamination or loss of capability to function in the manner described in the specification.

In addition, the identifying information set forth in 37 C.F.R. § 1.809 (d) should be added to the specification. See 37 C.F.R. § 1.803-1.809 for additional explanation of these requirements.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 23-34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Claim 23 is rendered vague and indefinite by the phrase "at least one Gram negative bacteria" (lines 1-2). It is unclear by this phrase if the composition actually contains only one gram-negative bacterium from the recited genus or if it contains (an effective amount of?) one species of gram-negative bacteria from the recited genus.

Claims 28 (line 1) and 33 (line 2) recites the limitation "the extract". There is insufficient antecedent basis for this limitation in these claims.

Claim 33 recites the limitation "the effective amount" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 34 recites the limitation "the insect" (is this meant to define the insect population?) and "the effective amount" in line 1. There is insufficient antecedent basis for these limitations in the claim.

Claim 34 also recites the limitation "mound" in line 2. There is insufficient antecedent basis for this limitation in the claim (e.g., what mound?).

All other claims depend directly or indirectly from rejected claims and are, therefore, also rejected under U.S.C. 112, second paragraph for the reasons set forth above.

Claim Rejections - 35 U.S.C. § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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Claims 23-26 and 28-34 are rejected under 35 U.S.C. 102(b) as being anticipated by Jong et al. (KR 9411524 - DWPI Abstract), with evidence provided by the ATCC Catalogue of Bacteria and Bacteriophages (18th ed., 1992).

A composition comprising a *Rhodobacter* such as *Rhodobacter capsulatus* and an insect food, such as a carbohydrate or cellulosic material, is claimed.

Jong et al. teach a composition comprising *Rhodopseudomonas capsulatus* (which, as evidenced by the ATCC Catalogue, is now well known and recognized in the art as *Rhodobacter capsulatus* - i.e., *Rhodobacter capsulatus* was earlier known as *Rhodopseudomonas capsulatus*; however, *Rhodopseudomonas capsulatus* has since been renamed *Rhodobacter capsulatus* - see, e.g., pages 269 and 275 under the respective genus/species headings *Rhodobacter capsulatus* and *Rhodopseudomonas capsulatus*) as an active ingredient therein, whereby the composition further includes a carbohydrate and/or humus (please note that humus is dead plant material and, thus, would inherently contain cellulosic material therein since cellulosic material such as cellulose is defined as an "amorphous carbohydrate polymer ($C_6H_{10}O_5$), the main constituent of all plant tissues and fibers" (Webster's Dictionary, 1988) - see DWPI Abstract. Based upon the unclarity of claims 33-34 (including the lack of antecedent basis limitations discussed above), the composition taught by Jong et al. reads upon these claims, as drafted. Please note that nothing would preclude the additional ingredient(s) disclosed by the cited reference from being used as "insect food".

Therefore, the reference is deemed to anticipate the instant claims above.

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Claims 23-26 and 28-34 are rejected under 35 U.S.C. 102(b) as being anticipated by Kobayashi (JP 05247378 - CAPLUS Abstract), with evidence provided by the ATCC Catalogue of Bacteria and Bacteriophages (18th ed., 1992).

Kobayashi teaches a composition comprising *Rhodopseudomonas capsulatus* (which, as evidenced by the ATCC Catalogue, is now well known and recognized in the art as *Rhodobacter capsulatus* - i.e., *Rhodobacter capsulatus* was earlier known as *Rhodopseudomonas capsulatus*; however, *Rhodopseudomonas capsulatus* has since been renamed *Rhodobacter capsulatus* - see, e.g., pages 269 and 275 under the respective genus/species headings *Rhodobacter capsulatus* and *Rhodopseudomonas capsulatus*) as an active ingredient therein, whereby the composition further includes cellulose (a carbohydrate polymer) - see CAPLUS Abstract. Based upon the unclarity of claims 33-34 (including the lack of antecedent basis limitations discussed above), the composition taught by Kobayashi reads upon these claims, as drafted. Please note that nothing would preclude the additional ingredient(s) disclosed by the cited reference from being used as "insect food".

Therefore, the reference is deemed to anticipate the instant claims above.

Claims 23-26 and 28-34 are rejected under 35 U.S.C. 102(b) as being anticipated by Nippon Life KK (JP 60027672 - DWPI Abstract), with evidence provided by the ATCC Catalogue of Bacteria and Bacteriophages (18th ed., 1992).

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Nippon Life KK teaches a composition comprising *Rhodopseudomonas capsulatus* (which, as evidenced by the ATCC Catalogue, is now well known and recognized in the art as *Rhodobacter capsulatus* - i.e., *Rhodobacter capsulatus* was earlier known as *Rhodopseudomonas capsulatus*; however, *Rhodopseudomonas capsulatus* has since been renamed *Rhodobacter capsulatus* - see, e.g., pages 269 and 275 under the respective genus/species headings *Rhodobacter capsulatus* and *Rhodopseudomonas capsulatus*) as an active ingredient therein, whereby the composition further includes various carbohydrate-containing ingredients including rice bran which would inherently comprise cellulosic material (e.g., cellulose - a carbohydrate polymer) - see DWPI Abstract. Based upon the unclarity of claims 33-34 (including the lack of antecedent basis limitations discussed above), the composition taught by Nippon Life KK reads upon these claims, as drafted. Please note that nothing would preclude the additional ingredient(s) disclosed by the cited reference from being used as "insect food".

Therefore, the reference is deemed to anticipate the instant claims above.

Claims 23-26, 28-30, and 32-34 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsuda (JP 05304959 - JPAB Abstract), with evidence provided by the ATCC Catalogue of Bacteria and Bacteriophages (18th ed., 1992).

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Matsuda teaches a composition comprising *Rhodopseudomonas capsulatus* (which, as evidenced by the ATCC Catalogue, is now well known and recognized in the art as *Rhodobacter capsulatus* - i.e., *Rhodobacter capsulatus* was earlier known as *Rhodopseudomonas capsulatus*; however, *Rhodopseudomonas capsulatus* has since been renamed *Rhodobacter capsulatus* - see, e.g., pages 269 and 275 under the respective genus/species headings *Rhodobacter capsulatus* and *Rhodopseudomonas capsulatus*) in an amount of 10^6 - 10^{10} /g (which although very difficult to interpret due to the U.S.C. 112, second paragraph rejections above including those concerning lack of antecedent basis, appear to be within the approximately claimed amount range) as an active ingredient therein, whereby the composition further comprises a bacterial culture solution (which would inherently contain at least one carbohydrate therein) - see JPAB Abstract. Please note that nothing would preclude the additional ingredient(s) disclosed by the cited reference from being used as "insect food".

Therefore, the reference is deemed to anticipate the instant claims above.

Claims 23-26, 28-30, and 32-34 are rejected under 35 U.S.C. 102(b) as being anticipated by Kobayashi et al. (JP 09238681 - JPAB Abstract), with evidence provided by the ATCC Catalogue of Bacteria and Bacteriophages (18th ed., 1992).

Kobayashi et al. teach a composition comprising *Rhodopseudomonas capsulatus* (which, as evidenced by the ATCC Catalogue, is now well known and recognized in the art as *Rhodobacter capsulatus* - i.e., *Rhodobacter capsulatus* was earlier known as *Rhodopseudomonas*

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capsulatus; however, *Rhodopseudomonas capsulatus* has since been renamed *Rhodobacter capsulatus* - see, e.g., pages 269 and 275 under the respective genus/species headings *Rhodobacter capsulatus* and *Rhodopseudomonas capsulatus*) as an active ingredient therein, whereby the composition further a seaweed polysaccharide (carbohydrate) - see JPAB Abstract. Based upon the unclarity of claims 33-34 (including the lack of antecedent basis limitations discussed above), the composition taught by Kobayashi et al. reads upon these claims, as drafted. Please note that nothing would preclude the additional ingredient(s) disclosed by the cited reference from being used as "insect food".

Therefore, the reference is deemed to anticipate the instant claims above.

Claims 23-26, 28-30, and 32-34 are rejected under 35 U.S.C. 102(b) as being anticipated by the ATCC Catalogue of Bacteria and Bacteriophages (18th ed., 1992).

The ATCC Catalogue teaches compositions comprising pure cultures (thus, apparently within the claimed amount ranges) of *Rhodopseudomonas capsulatus* (which, as evidenced by the ATCC Catalogue, is now well known and recognized in the art as *Rhodobacter capsulatus* - i.e., *Rhodobacter capsulatus* was earlier known as *Rhodopseudomonas capsulatus*; however, *Rhodopseudomonas capsulatus* has since been renamed *Rhodobacter capsulatus* - see, e.g., pages 269 and 275 under the respective genus/species headings *Rhodobacter capsulatus* and *Rhodopseudomonas capsulatus*), whereby the composition further comprises a concentrated

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growth medium (which would inherently contain at least one carbohydrate therein) as well as double strength skim milk (which also inherently contains carbohydrates therein such as lactose) - see, e.g., pages vi, 269, 275, 542 and 543 . Please note that nothing would preclude the additional ingredient(s) disclosed by the cited reference from being used as "insect food".

Therefore, the reference is deemed to anticipate the instant claims above.

Claim Rejections - 35 U.S.C. § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 23-26 and 27-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jong et al. (KR 9411524 - DWPI Abstract), Kobayashi (JP 05247378 - CAPLUS Abstract), Nippon Life KK (JP 60027672 - DWPI Abstract), Matsuda (JP 05304959 - JPAB Abstract), or Kobayashi et al. (JP 09238681 - JPAB Abstract), with evidence provided by the ATCC Catalogue of Bacteria and Bacteriophages (18th ed., 1992); or over the ATCC Catalogue of Bacteria and Bacteriophages (18th ed., 1992).

The references are relied upon for the reasons set forth above.

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It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to prepare a composition (such as any one of those disclosed by the cited references) comprising a result-effective amount of *Rhodobacter capsulatus* (*Rhodopseudomonas capsulatus*), especially since each of the cited references beneficially teach that this bacterial species is an active ingredient (and/or pure culture) therein. Accordingly, the adjustment of this particular conventional working conditions as well as other conventional working conditions (e.g., further including and/or substituting a commonly-employed, readily-available cellulostic carbohydrate source within such compositions), is deemed merely a matter of judicious selection and routine optimization which is well within the purview of the skilled artisan.

Thus, the invention as a whole is *prima facie* obvious over one or more of the cited references, especially in the absence of evidence to the contrary.

With respect to the U.S.C. 102 and 103 rejections above, it is noted that the cited references do not teach that the composition can be used in the manner instantly claimed, however, the intended use of the claimed composition does not patentably distinguish the composition, *per se*, since such undisclosed use is inherent in the reference compositions. In order to be limiting, the intended use must create a structural difference between the claimed composition and the prior art compositions. In the instant case, the intended use does not create a structural difference, thus the intended use is not limiting. Please note that when applicant claims a composition in terms of function and the composition of the prior art appears to be the same, the Examiner may make a rejection under both 35 U.S.C. 102 and 103 (MPEP 2112).

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Conclusion

No claim is allowed.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher R. Tate whose telephone number is (703) 305-7114. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brenda Brumback, can be reached at (703) 306-3220. The Group receptionist may be reached at (703) 308-0196. The fax number for art unit 1654 is (703) 872-9306.



Christopher R. Tate
Primary Examiner, Group 1654